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IS 6175-5 (1991): Screwing taps, Part 5: Nut Screwing Taps for ISO Metric Screw Threads Sizes M3 to M68 with Coarse Pitches [PGD 32: Cutting tools]



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Bhartrhari—Nitiśatakam

“Knowledge is such a treasure which cannot be stolen”

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IS 6175 (Part 5) : 1991
(Superseding IS 6174)
(Reaffirmed 2001)

भारतीय मानक

पेच वाली चूड़ियाँ काटने के औजार

भाग 5 आई एस ओ मीटरी पेच वाली चूड़ियाँ, साइज एम 3 से एम 68 मोटे
पिच वाली के लिए नट में पेच वाली चूड़ियाँ काटने के औजार — विशिष्ट

Indian Standard

SCREWING TAPS

PART 5 NUT SCREWING TAPS FOR ISO METRIC SCREW THREADS SIZES
M3 TO M68 WITH COARSE PITCHES — SPECIFICATION

UDC 621.993.1 : 621.882.082.1

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BUREAU OF INDIAN STANDARDS
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NEW DELHI 110002

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Price Group 1

FOREWORD

This Indian Standard was adopted by the Bureau of Indian Standards, after the draft finalized by Thread Cutting Taps and Dies Sectional Committee had been approved by Production Engineering Division Council.

This standard for nut screwing taps was first covered in IS 1988 : 1962 'Specification for screwing taps'. Later IS 1988 : 1962 was split into different parts and the contents of this standard was covered in IS 6174 : 1971. In this revision it has been covered under IS 6175 series:

- a) The dimensions for threaded portion of the taps have been deleted and now covered in IS 6173 (Part 1) : 1991 Screwing taps — Dimensions and tolerances on threaded portions : Part 1 For ISO metric screw threads. This was not covering for all the types of serial screwing taps and it was repeating in all the product standards.

This standard is in full conformity with ISO 2283 : 1972 'Long shank machine taps with nominal diameter from 3 to 24 mm and 1/8 to 1 in', issued by International Organization for Standardization (ISO).

The other Indian Standards on screwing taps of this series are:

IS 6175 (Part 1) : 1991	Screwing taps : Part 1 Hand and short machine screwing taps for ISO metric screw threads M1 to M2.5 — Specification (<i>second revision</i>)
IS 6175 (Part 2) : 1991	Screwing taps : Part 2 Hand and short machine screwing taps for ISO metric screw threads sizes M3 to M10 — Specification (<i>second revision</i>)
IS 6175 (Part 3) : 1991	Screwing taps : Part 3 Hand and short machine screwing taps for ISO metric screw threads size M3 to M68 with coarse pitches and M3 to M100 with fine pitches — Specification (<i>second revision</i>)
IS 6175 (Part 4) : 1991	Screwing taps : Part 4 Long shank machine screwing taps for ISO metric screw threads sizes M3 to M24 — Specification (superseding IS 7821)
IS 6175 (Part 6) : 1991	Screwing taps : Part 6 Screwing taps for pipe threads parallel G series — Specification (superseding IS 6172)
IS 6175 (Part 7) : 1991	Screwing taps : Part 7 Screwing taps for pipe threads parallel Rp series — Specification (superseding IS 6172)
IS 6175 (Part 8) : 1991	Screwing taps : Part 8 Screwing taps for pipe threads taper Rc series — Specification (superseding IS 7796)

For the purpose of deciding whether a particular requirement of this standard is complied with, the final value, observed or calculated, expressing the result of a test, shall be rounded off in accordance with IS 2 : 1960 'Rules for rounding off numerical values (*revised*)'. The number of significant places retained in the rounded off value should be the same as that of the specified value in this standard.

Indian Standard

SCREWING TAPS

PART 5 NUT SCREWING TAPS FOR ISO METRIC SCREW THREADS SIZES M3 TO M68 WITH COARSE PITCHES — SPECIFICATION

1 SCOPE

This standard covers the dimensions and requirements for screwing taps for ISO metric screw threads in the size range M3 to M68 with coarse pitches conforming to IS 4218 (Parts 1 to 6) : 1976 and with a relieved shank.

<i>IS No.</i>	<i>Title</i>
4218	ISO metric screw threads:
4218 (Part 1) : 1976	Part 1 Basic and design profiles (<i>first revision</i>)
4218 (Part 2) : 1976	Part 2 Diameter pitch combinations (<i>first revision</i>)
4218 (Part 3) : 1976	Part 3 Basic dimensions for design profiles (<i>first revision</i>)
4218 (Part 4) : 1976	Part 4 Tolerancing system (<i>first revision</i>)
4218 (Part 5) : 1979	Part 5 Tolerances (<i>first revision</i>)
4218 (Part 6) : 1978	Part 6 Limits of sizes for commercial bolts and nuts (diameter range 1 to 52 mm) (<i>first revision</i>)

2 REFERENCES

The following Indian Standards are necessary adjuncts to this standard:

<i>IS No.</i>	<i>Title</i>
6971 : 1991	Screwing taps — Technical supply conditions
6173 (Part 1) : 1991	Screwing taps — Dimensions and tolerances on threaded portion of screwing taps : Part 1 For ISO metric screw threads
6175 (Part 3) : 1991	Screwing taps — Part 3 Hand and short machine screwing taps for ISO metric screw threads sizes M3 to M68 with coarse pitches and M3 to M100 with fine pitches

NOTE — This standard excludes fine pitch thread screwing taps.

3 GENERAL DIMENSIONS

3.1 Dimensions of screwing tap for ISO metric

screw threads, coarse pitch shall be as given in Table 1.

4 TOLERANCES

4.1 Tolerances on threaded length and overall length and radial run-out shall be according to IS 6171 : 1991.

4.2 Dimensions and tolerances on threaded portion of screwing taps shall be according to IS 6173 (Part 1) : 1991.

5 MATERIAL

The material of screwing tap shall be as given in 4 of IS 6171 : 1991.

6 HARDNESS

The hardness of screwing tap shall be as given in 5 of IS 6171 : 1991.

7 GENERAL REQUIREMENTS

7.1 The number of flutes shall be as given below:

<i>Diameter</i>		<i>Number of Flutes</i>
From	To	
3	20	3 or 4
22	68	4 or 6

7.2 For requirements not covered in this standard, shall conform to the requirements of IS 6171 : 1991.

8 DESIGNATION

8.1 Screwing taps shall be designated by the name, nominal size, number of this standard and material from which it is made.

A screwing tap of size M10 with tolerance 6H and made from high speed steel (HSS), shall be designated as:

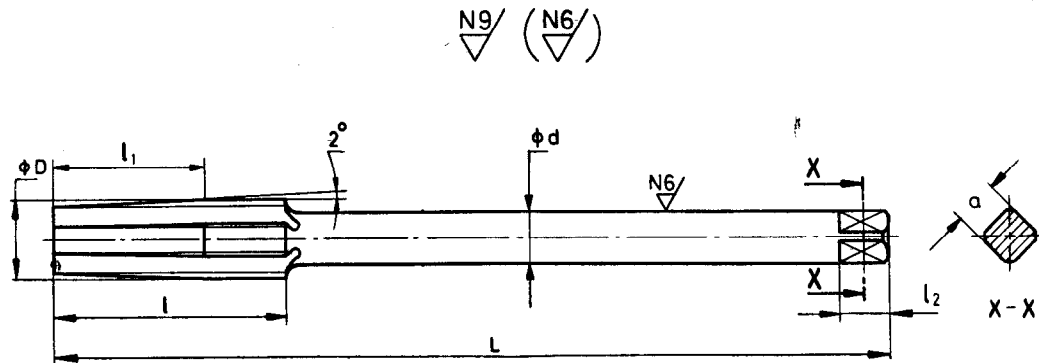
Screwing Tap IS 6175 (Part 5) M10 HSS

8.3 When the screwing tap is desired for class of tolerance other than 6H, class of tolerance 4H or 7H cut threads as appropriate, shall be mentioned in the designation immediately after the size.

9 MARKING

9.1 Screwing taps shall be marked with appropriate information as per clause 10 of IS 6171 : 1991.

Table 1 Dimensions of Screwing Taps for ISO Metric Screw Threads Coarse Pitch
(Clause 3.1)



All dimensions in millimetres.

Designation	Nominal Dia D	Pitch	d h9	l ₁	l	L	Square	
							a h1	l ₂
M3	3	0.5	2.24	16	22	70	1.80	4
(M3.5)	3.5	0.6	2.50	18	25	80	2.00	4
M4	4	0.7	3.15	18	25	90	2.50	5
(M4.5)	4.5	0.75	3.55	20	28	100	2.80	5
M5	5	0.8	4.00	20	28	100	3.15	6
M6	6	1	4.50	22	32	110	3.55	6
(M7)	7	1	5.60	25	36	110	4.50	7
M8	8	1.25	6.30	28	40	125	5.00	8
(M9)	9	1.25	7.10	28	40	140	5.60	8
M10	10	1.5	8.00	32	45	140	6.30	9
(M11)	11	1.5	8.00	36	45	160	6.30	9
M12	12	1.75	9.00	36	50	180	7.10	10
(M14)	14	2	11.20	36	56	200	9.00	12
M16	16	2	12.50	40	63	200	10.00	13
(M18)	18	2.5	14.00	45	63	220	11.20	14
M20	20	2.5	14.00	50	70	250	11.20	14
(M22)	22	2.5	16.00	50	80	280	12.50	16
M24	24	3	18.00	56	80	280	14.00	18
(M27)	27	3	20.00	56	90	315	16.00	20
M30	30	3.5	20.00	63	100	315	16.00	20
(M33)	33	3.5	22.40	71	110	355	18.00	22
M36	36	4	25.00	80	110	400	20.00	24
(M39)	39	4	28.00	80	125	400	22.40	26
M42	42	4.5	28.00	90	125	450	22.40	26
(M45)	45	4.5	31.50	90	140	500	25.00	28
M48	48	5	31.50	100	140	500	25.00	28
(M52)	52	5	35.50	100	160	560	28.00	31
M56	56	5.5	35.50	110	180	560	28.00	31
(M60)	60	5.5	40.00	110	180	560	31.50	34
M64	64	6	40.00	125	200	630	31.50	34
(M68)	68	6	45.00	125	200	630	35.50	38

NOTES

1 Non-preferred sizes are given in parentheses.

2 The figure is indicative of dimensions only and does not specify design features.

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AMENDMENT NO. 1 JANUARY 1996
TO
IS 6175 (Part 5) : 1991 SCREWING TAPS
PART 5 NUT SCREWING TAPS FOR ISO METRIC SCREW
THREADS SIZES M3 TO M68 WITH COARSE PITCHES —
SPECIFICATION

Typographical errors have crept in the text of this standard as far as 'year of printing' is concerned. Year of printing shall be read as '1992' in place of '1991' in the text of the following Indian Standards wherever it appears:

IS 6171, IS 6173 (Part 1) and IS 6175 (Parts 1 to 3 and Parts 6 to 8).

(*Page 1, clause 1, line 5*) — Delete ' : 1976 '.

(*Page 1, clause 2*) — Substitute '6171 : 1992' for '6971 : 1991'.

(*Page 2, clause 8.3*) — Substitute clause No. '8.2' for '8.3'.